REMARKS

The Office Action mailed on September 20, 2005 has been given careful consideration by applicant. Reconsideration of the application is respectfully requested in view of the amendments and comments herein.

The Office Action

Claim 24 is objected to for minor informalities.

Claims 1, 3, 14, 23, 25, and 26 are rejected under 35 U.S.C. §102(b) as being anticipated by Graham, et al (US 5,222,154).

Claims 2, 4, and 15 are rejected under 35 U.S.C. §103(a) as being unpatentable over Graham, et al. in view of Shafarenko (IEEE Transactions on Image Processing, Vol. 7, No. 9, September 1998).

Claims 6-12 and 17-21 are rejected under 35 U.S.C. §103(a) as being unpatentable over Graham, et al. in view of Herley (US Patent Application Publication No. US 2002/0146173).

Claim 13, 22, and 24 are rejected under 35 U.S.C. §103(a) as being unpatentable over Graham, et al. in view of Herley and further in view of Shafarenko.

Objection to Claim 24

Claim 24 is objected to for minor informalities. This objection should be withdrawn for at least the following reason. Claim 24 has been amended according to the Examiner's suggestion.

The Anticipation Rejection

The Examiner has rejected claims 1, 3, 14, 23, 25, and 26 under 35 U.S.C. §102(b) as being anticipated by Graham, et al. (US 5,222,154). This rejection should be withdrawn for at least the following reasons. Graham, et al. does not teach or suggest each and every element as set forth in the subject claims.

Independent claims 1 and 14 recite detecting sweep segment information (information related to uniformly changing color) from one or more color channel histograms of a graphics image and segmenting the graphics image into sweep (uniformly changing color) and non-sweep (uniform color) areas using the sweep segment information. Graham, et al. does not teach or suggest such claimed aspects. Instead, Graham, et al. teaches identifying areas of related color (not areas of uniform

color and areas of uniformly changing color) in electronically captured spot color images and replacing the related colors within an area with a single dominant color representative of the area. (See Abstract).

More particularly, Graham, et al. discloses generating a 3D histogram of an image in which colors within a predefined color tolerance are grouped together. (See col. 3, ll. 60-64, cols. 5-6, ll. 57-5, and col. 7, ll. 49-58). FIG. 4 illustrates such 3D histogram having four color groupings, wherein each color grouping represents one of four colors – black, red, blue and yellow. (See FIG. 4 and col. 7, ll. 49-58). A dominant color for each color group is obtained by determining a maximum occurrence within a color group. (See col. 5, ll. 59-64). The dominant color for each of the color groups are used to create a color pallet. (See col. 5, ll. 57-64). Each line of the image is then evaluated. (See col. 10, ll. 13-35). Each color segment within a line is individually compared with adjacent segments within the line, segments within a preceding line, and segments within a next line. (See col. 10, ll. 45-59). If the colors of such segments are within a predefined tolerance, the segments are flagged as matched. (See col. 10, ll. 50-54). Otherwise, the segment is subsequently deemed the color of a segment in a preceding or next line with a closest color match. (See cols. 10-11, ll. 61-5). The system then groups the matched color areas and assigns the closest predominant color from the color pallet to each of the matched areas. (See col. 11, ll. 6-10).

Hence, Graham, et al. groups various segments of colors based on color tolerances and replaces the colors within a tolerance grouping with a single color. (See Abstract). For example, if two color segments with different colors have colors that fall within a similar tolerance level of a color group, both colors are replaced with the dominant color of that color group. In another example, if two color segments with the same color, but different attributes (e.g., dark blue and light blue) fall within a similar tolerance level of a color group, both colors are replaced with the dominant color of that color group. With both of the above examples, if the two color segments, with different colors or similar colors, fall within different tolerance levels for different color groups, then the color for each color segment is replaced with a different color, namely, the dominant color of its respective color group. Thus, Graham, et al. groups color segments into one or more color groups (non-sweeps), based on color tolerances, and replaces the colors within each group with a single color. This results in delineating the color segments into one or more color groups (non-sweeps), for example, black, red, blue, or yellow. In contrast, the subject claims recite detecting uniformly changing color

(sweep segment) information from one or more color channel histograms of a graphics image and using such information to segment the graphics image into sweep (uniformly changing color) and non-sweep (uniform color) areas using the sweep segment information. Graham, et al. is silent regarding such claimed aspects.

Independent claim 23 recites projecting an image represented in a color space into a plurality of planes, detecting curves in each plane, identifying pixels of the color associated with each detected curve and storing such pixel information, and combining the pixel information for each color to determine if pixels of that color are part of a sweep. As described above, Graham, et al. does not contemplate identifying areas of uniformly changing color and, thus, cannot teach determining if pixels of a color are part of a sweep. Graham, et al. is simply directed toward locating areas of related color and replacing the related colors within an area with a single color.

Claims 3, 25, and 26 depend from independent claim 1, and are believed to be in condition for allowance for at least the above reasons.

In view of the above, it is readily apparent the Graham, et al. does not teach or suggest claims 1, 3, 14, 23, 25, and 26. Accordingly, this rejection should be withdrawn.

The Obviousness Rejections

The Examiner has rejected claims 2, 4, and 15 under 35 U.S.C. §103(a) as being unpatentable over Graham, et al. in view of Shafarenko (IEEE Transactions on Image Processing, Vol. 7, No. 9, September 1998). This rejection should be withdrawn for at least the following reasons. The combination of Graham, et al. and Shafarenko do not teach or suggest the subject claims. In particular, Shafarenko does not make up for the aforementioned deficiencies of Graham, et al., and claims 2 and 4 depend from independent claim 1 and claim 15 depends from independent claim 14. Shafarenko instead teaches a technique that uses a watershed algorithm to segment 2D or 3D color histograms of an image. (See Abstract). Moreover, Shafarenko expressly teaches away from such combination; Shafarenko discloses a technique where segmentation must take place in a "uniform color space" (See Abstract), which is contrary to the claimed invention in which uniformly changing color portions in an image are detected and segmented from uniform color portions. In view of the above, it is respectfully requested that this rejection should be withdrawn.

The Examiner has rejected claims 5 and 16 under 35 U.S.C. §103(a) as being

unpatentable over Graham, et al. in view of Bradski (US 6,647,131). For at least the following reasons, this rejection should be withdrawn. Graham, et al. and Bradski, individually and in combination, do not teach or suggest the invention recited in the subject claims. More particularly, claim 5 indirectly depends from claim 1 and claim 16 depends from independent claim 14, and Bradski fails to make up for the deficiencies of Graham, et al. described above. Bradski merely teaches detecting motion by generating a motion region image of an object, obtaining associated normal gradients, using the gradients to remove erroneous data, and using remaining gradients to identify motion. Therefore, this rejection should be withdrawn.

The Examiner has rejected claims 6-12 and 17-21 under 35 U.S.C. §103(a) as being unpatentable over Graham, et al. in view of Herley (Patent Application No. US 2002/0146173). The rejection of these claims should be withdrawn for at least the following reasons. Graham, et al. and/or Herley do not teach or suggest all aspects recited in the subject claims. Claims 6-12 (directly or through a dependent claim) depend from independent claim 1 and claims 17-21 (directly or through a dependent claim) depend from independent claim 14, and Herley does not make up for the above-noted deficiencies of Graham, et al. and Shafarenko. Rather, Herley teaches a technique for automatically detecting object boundaries in a digital image in which one or more boundaries obtained from analyzing an edge map are assigned to respective objects based on a set of rules. Accordingly, this rejection should be withdrawn.

The Examiner has rejected claims 13, 22, and 24 under 35 U.S.C. §103(a) as being unpatentable over Graham, et al. in view of Herley and further in view of Shafarenko. Claims 13, 22, and 24 (directly or indirectly) depend from independent claims 1, 14, and 23, respectively, and the combination of Herley and Shafarenko do not make up for the aforementioned deficiencies of Graham, et al. Accordingly, withdrawal of this rejection is respectfully requested.

Newly added Claims

Claims 27 and 28 have been added to further emphasize various aspects of the originally filed claims. No new matter has been added. Entry of these claims is kindly requested.

CONCLUSION

For the reasons detailed above, it is respectfully submitted that all claims (1-28) remaining in the application are in condition for allowance.

Respectfully submitted,

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